

# *Sporting* **MONTANA**



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VOL. I - NO. 2

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*Official Publication of  
The Montana Fish and Game Department*

# STATE OF MONTANA

*John W. Bonner, Governor*

## MONTANA FISH AND GAME COMMISSION

*Elmer Johnson, Chairman*

*A. C. Grande, Jr.*

*Edward M. Boyes*

*Thomas S. Morgan*

*William Carpenter*

*Robert H. Lambeth, Secretary*

### *The Chairman's Message*

The slogan "the greatest good for the greatest number" also applies to Montana's wildlife and sportsmen. Visitors tell us that Montana has a great resource in its fish and game. It is our plain obligation to protect and conserve these resources, just as we would any others, for our citizens.

But our obligation goes even further. For we are pledged to extend and restore wildlife throughout the Treasure State, and to many areas that have seen it depleted over almost a century. Through scientific management and restoration practices, the Montana Fish and Game department is now moving along this new trail.

The slogan also emphasizes our duty to see that the enjoyment and recreation inherent in our wildlife resources are passed on to the greatest number. There, too, we are embarking on work of establishing and improving areas that will help guarantee this same enjoyment for our children and children's children.

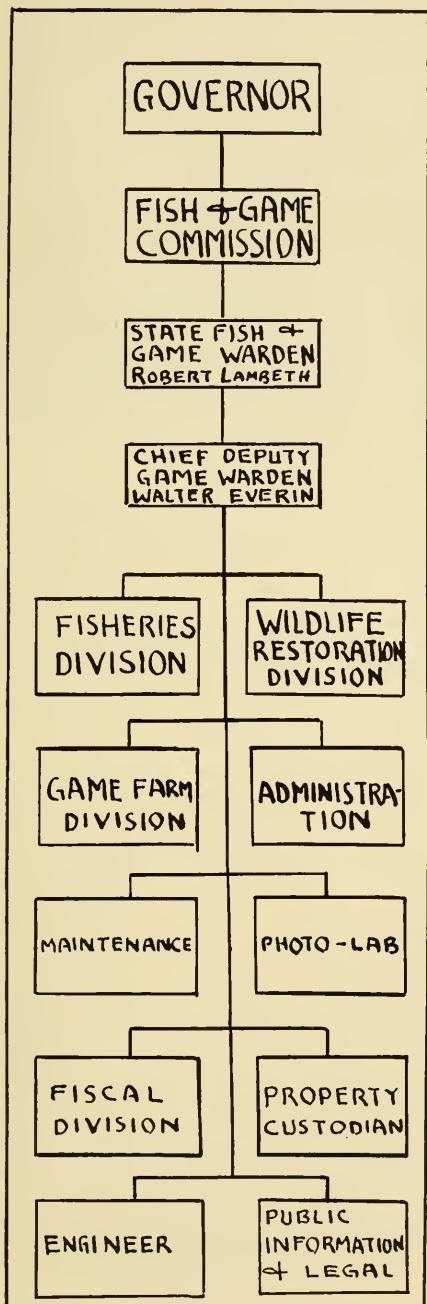
*Elmer Johnson*

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Lorraine D. Kurfiss, Editor

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## COVER PICTURE

Montanan's all have their favorite seasons according to their likes and dislikes. But in Montana, no season surpasses the other three in beauty, for the Treasure State wears all colors well—the greens of spring and summer, the multi-colors of fall, and now it wears equally as well the bluish-white of its snowy winter.



## *Editorial:*

# HUNTING CASUALTIES —

## *an unnecessary evil*

By JOHN RISKEN

Director, Public Information

At the time SPORTING MONTANA went to press, John H. Risken, director of the department's public information division, was called to Washington, D. C. on another job for the federal government. He has supervised and contributed to this publication besides handling other public relations and law work. The Department will miss him, but wishes him luck in his new endeavor.

—LK, Editor.

It takes just a fraction of a second, one careless action, to turn an otherwise enjoyable hunting trip into a tragedy which no one can forget. Taking a chance "just this time" because a person is too tired to bother unloading the rifle or shotgun, or because there may be an opportunity for another shot on the way home, is small consolation when the life of a hunting partner has been snuffed out or injury is inflicted.

An integral part of its public information program, the Montana Fish and Game department has, for the past year, directed much of its attention to the reduction of hunting casualties in the Treasure State. Working hand in glove with the National Rifle Association and the Sporting Arms and Ammunition Manu-

facturing Company, it has endeavored to make the state's hunting public more aware of the capabilities of the weapons carried on hunting trips—to incalculable respect for firearms in the minds of those who seek rest and relaxation in Montana's many hunting areas.

Approximately 150,000 pamphlets were distributed to sportsmen's groups and license dealers in the state in September. Their title was "The Ten Commandments of Safety," and, as implied by the title, the subject dealt with was the proper handling of firearms. Whether any hunting accidents were actually avoided as a direct result of this widespread pamphlet distribution will probably never be known, but if only one accident were prevented, the Department would feel sufficiently well-rewarded for the effort made.

Prior to the hunting seasons of last fall, forms were sent to all game wardens to be filled in when a hunting casualty was reported in their various districts. Many questions were asked in these forms, dealing with all phases of the hunting trip from the size of weapon used to the query, "Were intoxicants present?" As ac-

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Above are professors and students making up the wildlife research study unit at Montana State University. Top row, left to right; Dan Poole, Missoula; Prof. Melvin Morris; Dr. E. L. Cheatam (seated), unit leader; Dr. Philip Wright; Summer Dow, Knoxville, Tenn. Bottom row: Dick Carter, Missoula; Dwight Stockstad, Rapids, S. D.; Wes Woodgerd, Missoula; and Roger Hungerford, Moscow, Idaho.

## WILDLIFE RESEARCH: *on campus*

Animals can't talk, but they sure can tell you a lot if you're interested enough.

Now meet a colony of scientists and students who are interested enough, and hear what they're doing about it.

Roughly ten years ago, the need was realized by men prominent in Montana's wildlife program for an intensive research study unit to investigate, demonstrate, and disseminate their findings on the state's wildlife and its problems. Now, in 1951, just such an organization is celebrating its first birthday on the campus of Montana State University.

It is comprised of twelve personnel members including five students—four of whom are working under fellowships—four staff members, and a three-man co-ordinating committee. The unit is financed by the Montana Fish and Game Department, Montana State University, the Wildlife Management Institute, and the U. S. Fish and Wildlife Service. Co-ordinating committee members are Dr. J. W. Severy, representing Montana State University, R. H. Lambeth, representing the Fish and Wildlife Service and the Wildlife Management Institute. Four one-thousand dollar

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scholarships are sponsored by the fish and game department.

### **leader chosen**

With financial and moral backing obtained, the co-operating agencies set to work to find just the right man to be unit leader. He had to be a wildlife biologist with plenty of background in research work, and one who could handle students. They shot for the top man and got him—Dr. E. L. Cheatum, who was leading a Pittman-Robertson project on disease studies in wildlife and research on physiology of the reproduction of whitetailed deer for the New York Conservation department at Albany. He came with good recommendations: He had attended Southern Methodist University for three years, and claimed his BS, MS, and Ph. D., degrees at the University of Michigan; he taught bacteriology and human physiology at John Tarleton Agricultural college and fresh water ecology and general biology at Southwest Texas Teachers' college and had 11 years' experience in wildlife research in New York State.

### **assistants**

Assistants appointed under Cheatum were Prof. Melvin Morris, of the MSU Forestry school and Dr. Philip L. Wright of the Zoology Department. Mrs. Alvina Barclay was named staff secretary.

The student program, accepted by the University Graduate Council provides for the Master of Science Degree in Wildlife Technology under the Biological Science Division, and the Forestry school has a graduate

program for the Master of Science degree in Wildlife Management.

The students, Dan Poole, Missoula; Roger Hungerford, Moscow, Idaho; Dwight Stockstad, Rapids, S. D.; Dick Carter, Missoula; Wes Woodgerd, Missoula, and Summer Dow, Knoxville, Tenn., are undertaking individual projects under the directions of Cheatum and his associates. Here's what they are doing:

### **botulism**

Dan Poole, collaborating with Doctors J. Frederick Bell and William Hoyer of the U. S. Public Health Laboratory at Hamilton and with Fish and Wildlife Service personnel, will conduct an investigation of the specific sources of botulism toxin poisoning ducks. Botulism, perhaps better known as western duck sickness, is a form of food poisoning that takes an annual summer toll of thousands of waterfowl in the western portions of the United States, Canada, and in Mexico. The long-range application of this study will be the devising of control measures so as to reduce botulism losses.

Roger Hungerford wants to determine the value of certain types of hay and browse foods for elk. His plan of action is to construct pens at the Boyd ranch on the Blackfoot-Clearwater Game Range acquisition for the trapped animals wherein there is no natural food. Natural food may consist of cured native bunch grass and other common browse. Then separately, he will weigh the elk and the amount of food to be offered him. At

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# DEPARTMENT PERSONALITIES

## — *Introducing Margaret*

Margaret Jennings, cashier for the Fish and Game Department, is one who believes that women who leave the sporting world to the men are depriving themselves of probably the most wholesome hobbies available.

Whether armed with shotgun or camera, Margaret takes advantage of her leisure time in the outdoors. Considering Montana's wealth of big game says she, some of it certainly is ear-marked for the female huntress. That's how she knew last fall that somewhere in the hills there was an antelope waiting to wear her tag. So she, with the aid of her husband, Jim, decided to find him.

Margaret had never hunted antelope before, and the day was not half over until she realized it was no cinch. She and Jim trudged many weary miles, and then, toward the end of the day, when it seemed as if antelope had never set foot upon that ground, Margaret spied her prey. There was no question about it. She had to get him, and she did.



On the serious side of the sporting world, Margaret is strictly a business woman. Her work at the department involves income accounting and she deals with approximately 500 license agents in the state who handle the sale of hunting and fishing licenses.

Since June of 1944, when she started working for the department, she has become familiar with many of her license dealers, if only to recognize their handwriting.

"It's a lot of work," Margaret says, "but the agents are really good Joes." That remark is evidenced by the frequent boxes of candy she gets from her dealers.

Margaret and Jim seldom find it necessary, on long winter evenings, merely to reminisce over previous hunting and fishing trips—they can actually re-live them. With their own home movies, all they have to do is sit back on the sofa, relax, and watch the excursions of previous seasons unfold in color before their eyes.

# THE SILENT HUNTER-



Waldo Newton, famous Montana bowhunter.

Definitely in the minority, but increasing in numbers year by year are those who stalk for big game each fall with a weapon as primitive as the sling-shot David used to kill Goliath.

These are the bowhunters. To them, the purpose of hunting is not merely to bag game, but the enjoyment of combining skill, instinct, split-second timing, and silence to out-wit their fleet-footed prey.

At the present time, there are more than two hundred archers in organized clubs in Montana. They hail

from Anaconda, Great Falls, Livingston, Missoula, Helena, Bozeman, Billings, West Glacier, and Brush Lake Resort.

Probably the most famous of Montana's bowhunters and certainly a national figure is Helena's Waldo Newton who bagged his moose last fall with three arrows, and who was featured as cover man on **Archery** magazine. He has also contributed to national sports magazines. Waldo expresses what every archer feels when he says that he likes hunting with a handicap—there's more of a challenge, and it's more fun.

Today's Robin Hood considers his a weapon of beauty and romance—light, deadly, and beautiful. He figures that his life's energy is put into every arrow sent into the air. Truly, the force behind the flying shaft must be placed there by the archer. At the moment of greatest strain, he must draw every sinew to the utmost. His hand must be steady, his nerves under absolute control, his eye keen and clear. He must outsmart the instinctive cunning of his quarry. With Indian silence, he must approach his game within striking distance; then, with every nerve taut, he draws his bow.

Zing! . . . thud! And that's all that is heard. Then, quick as a flash, another shaft is released, then another. His animal is felled.

The bow is generally thought of by those who do not know, as a

# *the thrill of the kill*

By LORRAINE KURFISS

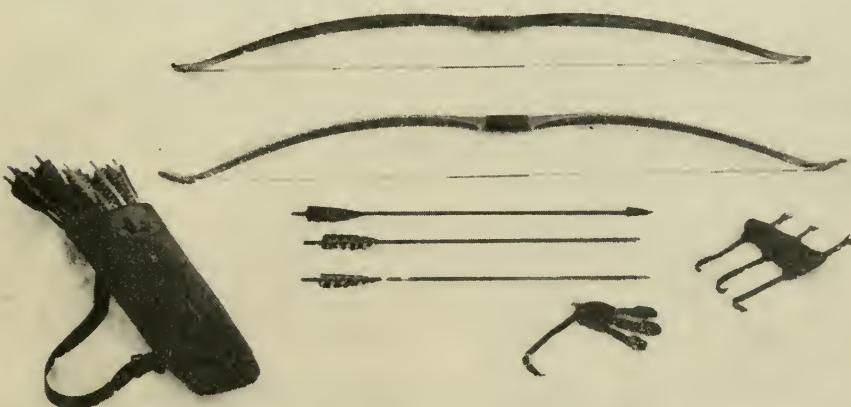
primitive and ineffectual weapon compared to the rifle. This is not so, for while the arrow does not kill by shock as does the bullet, it has penetration equal to the highest powered rifles generally used for big game. The arrow kills by inducing terrific hemorrhage and the arrow placed anywhere in the body cavity is effectual. Game waste by this method of hunting is never high.

Bowhunting may well be a poor man's sport as far as cost is concerned. The complete outfit for the bowhunter consists of a bow with a pull of about fifty pounds to as much more as the hunter can handle, a dozen blunt arrows for small game, a dozen broadhead arrows for big game, a shoulder quiver in which to carry arrows, a leather shooting glove, a leather wrist guard and a

file to sharpen the broadheads. The cost of the complete outfit is about \$40, depending upon the quality of equipment. Compare that with just what the average hunter plunks down on the counter for shotgun shells during the hunting season.

The average sure, or point-blank, range is forty to sixty yards and the odds are very good up to eighty. The arrow, however, is deadly to the end of its flight which is about 250 yards, depending upon the type of pull and bow used.

Most hunters who take to the field with bow and arrow were once rifle and shotgun hunters who missed the thrill that goes with competition and handicap. Come fishing season, they're probably the one who will be fishing with a willow, a string, and a bent pin.





Courtesy Iowa Conservationist

## THE DOE STORY - *should they be hunted?*

The old saw, "The hand that rocks the cradle rules the world," has been applied to many situations, each of which illustrated the undeniable power of womanhood. Though the class, as whole, has been labeled the "weaker sex," it is irrefutable that females treading lightly over the surface of this planet have the upper hand in most of the affairs of man, whether the male of the species recognizes it or not.

As it is in the human world, so it is in the realms of *Odocoileus hemionus* and *Odocoileus virginianus*, or the mule deer and the white-tailed deer, respectively, the two types to be found and hunted within the borders

of the state of Montana. Approximately 150,000 deer find Treasure state forest and plains to their liking, and their stay here places the herd-management job directly in the lap of the Montana Fish and Game Department. Roughly speaking, between two-thirds and three-fourths of the total number cited above are doe deer, and their role in the proper management program of the various individual herds is becoming increasingly important.

### **the "buck law"**

In the early days of game management, a doctrine came into being relating to the management of deer herds throughout the United States,

which has been absorbed to some extent by most of the Western states. Around the turn of the century, deer stocks over the nation had been sadly depleted by "meat hunters" and "skin hunters," the latter taking only the hide and leaving the meat as carrion. The doctrine referred to has become known as the "buck law," and it served well when the deer were in danger of becoming extinct, or at least reduced to a number where indiscriminate hunting would endanger their existence. By allowing the hunting of the male of the species only, it was not long before strong gains were noted in population figures, much to the relief and delight of those proponents of the buck law. Pennsylvania, in 1907, was the leader in the field, followed by New York, 1912, Wisconsin, 1915, and Michigan, 1921.

In addition to the no-doe seasons, steps were taken to prevent forest fires and fire hazards, and the elimination of predators, the deer's natural enemies. These, combined, made for a gathering momentum in deer propagation. Warden surveillance in keeping poaching activities at a minimum was also a factor in the rebuilding of the nation's deer stocks.

#### **herd increases**

Examples of the ability of deer to reproduce are legion, some of the more outstanding coming from North Carolina, where, in 1916, a survey showed 1,000 of the animals in the Pisgah National Forest. Two decades later, in 1936, this number increased

to the point where more than 10,000 deer occupied the same area, a 1,000% increase. Pennsylvania, deerless at the beginning of the 20th century, developed a herd that totalled almost a million by 1935.

Montana did not have an exact parallel to these two mentioned states, but its story was similar enough in content to warrant the citations set forth to give the reader an idea of the measures found necessary elsewhere were also adopted here; viz, the buck law, forest fire prevention, predator control and wardens on the job. These, and other measures, have been utilized to give this state one of the finest deer herds in the West. Although never in danger of complete extinction, a situation experienced mostly east of the Mississippi, the local deer population did, at one time, drop to an alarmingly low point. Those were the days

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Courtesy Wisconsin Conservation Department



# The Waterfowl Hunting Season in Montana

*By Wynn Freeman, Waterfowl Biologist*

Hunting regulations for wild game are established primarily for one reason. That is, to provide an equitable harvest that will maintain an adequate breeding population. The U. S. Fish and Wildlife Service is charged with the responsibility of maintaining an adequate breeding population of waterfowl and, therefore, hunting regulations.

In order to sell of surplus stock, a farmer must know how many head he has on the ranch and how many head he wants to keep. The same principle applies to wildlife. However, a wild population scattered over an entire continent poses many problems concerning what the basic unit is to be and also the determination of what the harvest should be.

## **yearly nose counts**

With this problem of harvest in mind, the waterfowl population is counted twice each year. One count is made in January to determine how the waterfowl came through the hunting season. The Fish and Wildlife Service, the various State Game Departments and the Republic of Mexico all cooperate in this winter census. The second count is made in the spring when the birds have become established on their nesting territories. This count is made through the cooperation of the Fish and Wildlife Service, the State Game Departments, the Dominion of Canada, and

various private agencies including Ducks Unlimited, and concerns the variations apparent in what would be considered the basic breeding population. These counts may not be 100 per cent accurate but, when taken over the same area during the same time of year, they do establish yearly trends in the over-all waterfowl population.

The part the individual State Game Departments play in aiding the U. S. Fish and Wildlife Service in making these counts cannot be overemphasized. It has made possible a very complete coverage over a necessarily huge area. For example, the Montana State Fish and Game Department flew over 2,000 miles in addition to many miles covered by ground crews counting ducks in order to de-

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# The Montana Department Takes Stock

## *a yearly inventory*

As in any other large business, the Montana Fish and Game Department took stock of itself at the close of 1950. The yearly "glance back" is one of the absolute necessities for all well-run businesses because what is revealed by the stock taking in many cases points out new methods to be utilized for the betterment of the enterprise and the welfare of those individuals working for the enterprise.

Montana is recognized the nation over as one of the foremost states in the fields of fish, big game, and game bird management. It is a recognized leader due in large part to its vast resources of these wild things, and their

proper management is the direct responsibility of the Fish and Game Department.

### **department structure**

The basic organization of the Department is materially unchanged from the previous year when the Commission, the Department's board of directors, designated the State Fish and Game Warden as its executive officer and directed that all operations would function through his office. Robert H. Lambeth is the State Game Warden and the Secretary of the Commission.

The operations of the Department  
(Continued on next page)

Below is the shiny Sam W. Mitchell building, new headquarters for many state offices.



are many and varied. These include fisheries, law enforcement, game farms, wildlife restoration, administration, public relations and legal, engineering, property custodian, shop and graphic reproduction.

### **a new home**

One of the most significant events in the Department's life occurred last year when the new Sam W. Mitchell building was completed, and space was allotted for the use of the Department. Through this move, the crowded condition which existed when the agency was housed in the Capitol building was relieved. The main offices are on the fourth floor of the new edifice, while the photo lab, engineering and accounting offices are on the bottom floor. All personnel have expressed satisfaction over the new accommodations.

### **self-supporting agency**

One of the characteristics of the Fish and Game Department which singles it out as unique among governmental agencies is its source of revenue. Money to finance the widespread operations cited above comes entirely from receipts from license sales, federal aid funds, fines and remittances from confiscation sales. The Department does not enjoy a legislative appropriation to finance its functioning.

During the first eight-month period of the Department's "license year," which began May 1, 1950 and ended December 31, 1950, the following number of licenses and miscellaneous permits were noted:

|                                    |               |
|------------------------------------|---------------|
| Resident Bird & Fish               | \$ 462,297.00 |
| Resident Big Game                  | 162,582.00    |
| Tourist Fishing                    | 57,225.00     |
| Non-resident Fishing               | 35,350.00     |
| Non-resident Bird                  | 2,325.00      |
| Non-resident Big Game              | 76,800.00     |
| Shipping Permits                   | 1,238.40      |
| Special Moose Permits              | 1,900.00      |
| Special Antelope Permits           | 41,725.00     |
| Special Elk Licenses               | 175.00        |
| Special Deer Licenses              | 7,440.00      |
|                                    | <hr/>         |
|                                    | \$ 849,057.40 |
| Less Dealers' Fees                 | \$ 26,143.30  |
| Plus 1949 Accounts paid in 1950    | \$ 4,510.10   |
|                                    | <hr/>         |
| <b>Miscellaneous Sales:</b>        |               |
| General Trappers License           | \$ 7,500.00   |
| Land Owner Trappers Licenses       | 351.00        |
| Beaver Tags                        | 4,453.50      |
| Beaver Permits                     | \$13,777.00   |
| Guides Licenses                    | 585.00        |
| Resient Fur Dealer Licenses        | 450.00        |
| Certificates of Identification     | 403.50        |
| Fur Dealer Agent Licenses          | 210.00        |
| Non-resident Fur Dealer Licenses   | 100.00        |
| Minnow Seining Permits             | 120.00        |
| Rough Fish Seining Permit          | 50.00         |
| Alien Gun Permit                   | 25.00         |
| Outfitters Licenses                | 1,390.00      |
|                                    | <hr/>         |
|                                    | \$ 29,520.00  |
|                                    | \$ 29,520.00  |
| <b>Miscellaneous Revenue:</b>      |               |
| Fines                              | \$19,239.55   |
| Sale of Confiscated Meat and Fish  | 1,418.57      |
| Sale of Confiscated hides and furs | 8,427.35      |
| Royalty on Beaver Sold             | 7.50          |

|   |                |
|---|----------------|
| Extra Beaver Granted                                    | 87.00          |
|   | <hr/>          |
| \$34,346.94   | \$ 34,346.94   |
|   | <hr/>          |
| Less returned check                                     | 554.80         |
|   | <hr/>          |
| Pittman-Robertson<br>Income by Federal<br>Reimbursement | 206,252.60     |
|   | <hr/>          |
| TOTAL INCOME from<br>May 1, 1950 to<br>Dec. 31, 1950    | \$1,096,988.94 |

As of the date when the above figures were compiled, an estimated 90% of the annual income for the Department's operation had been received. During the period from the close of the general hunting season in the fall until the beginning of the fishing season of the next year, little income is received by the Department.

#### outgo is up

Like other large businesses, the Fish and Game Department has been affected by the upward spiral of wages and prices of materials. These have necessitated the curtailment of an expanded over-all program. Fisheries research will be enlarged under the provisions of the newly enacted Dingell-Johnson bill which will provide federal money in the same manner as the Pittman-Robertson bill provided for wildlife restoration projects. A further increase in operating costs will curtail present plans for expansion in upland and migratory bird work, and other important projects. An increase in revenue seems to be indicated.

#### sports pressure up

Hunting and fishing pressure over the years has been steadily building up to a point where interest in these sports seems to be shared by a large number of the population of this state. To illustrate this point, comparative figures are presented for your perusal:

Resident Bird and Fishing Licenses Sold—  
1920—70,429; 1930—82,331; 1940—92,645;  
1950—160,484.

Non-resident Hunting and Fishing Licenses Sold—  
1920—1,407; 1930—4,954; 1940—7,227;  
1950—28,335.\*

\* Not yet complete.

Percentage wise, this represents a gain of 227% in the sale of resident bird and fishing licenses and a gain of 1900% in the sale of non-resident licenses during the 30-year period from 1920 to 1950.

The growth of the Fish and Game Department has coincided with the license sale trend, and it is indicated that continued expansion of services to the hunting, fishing and trapping public will be geared to annual license sales.

#### the budget

The annual operating budget is prepared for our fiscal year from May 1 to April 30 of the following year. Figures showing expenditures from the current budget are complete through November 30 and are as follows:

|                    | Budget      | Expended    |
|--------------------|-------------|-------------|
|                    | Estimate    | to Nov. 30  |
| Commission         | \$ 6,250.00 | \$ 4,238.21 |
| Administration     | 87,893.00   | 57,742.17   |
| Public Information | 15,000.00   | 5,122.45    |
| Predator Control   | 39,300.00   | 25,993.85   |

(Continued on next page)

|  |            |            |
|--|------------|------------|
| Miscellaneous .....  | 36,000.00  | 14,059.17  |
| Enforcement .....  | 240,000.00 | 127,370.18 |
| Fisheries .....  | 308,184.70 | 173,336.32 |
| Game Farms .....   | 63,392.00  | 37,998.68  |
| Wildlife Restoration ..  | 188,600.00 | 112,242.81 |
| <b>University Research</b>   |            |            |
| Unit .....   | 6,000.00   | 881.56     |
| Appropriation by Legis-<br>lature from Fish and<br>Game Fund to Pur-<br>chasing Department.... |            | 1,977.50   |

### **general wildlife conditions**

It has been demonstrated many times and in all sections of this state that what fish and game need most are suitable habitats in which to live and thrive free from continual molestation and predation by man, with limited annual harvests so as not to impair adequate breeding potential. The basic management plan then is simple, but complex problems arise over economic use of land where the raising of wildlife conflicts with other interests. Problems of development of suitable habitat for introduction of wildlife or restoring habitats which have been destroyed by abuse and problems arising from human interference must be overcome. Many persons in wildlife work have often stated that wildlife is more easily managed than are the people for whom it is managed.

Generally wildlife populations throughout the state are considerably higher than they were 10 years ago. This is true except for certain native upland game birds which are dwindling due to man's encroachment upon their natural habitat. Fortunately, introduced species, such as the ringneck pheasant and Hungarian partridge are adaptable for the new

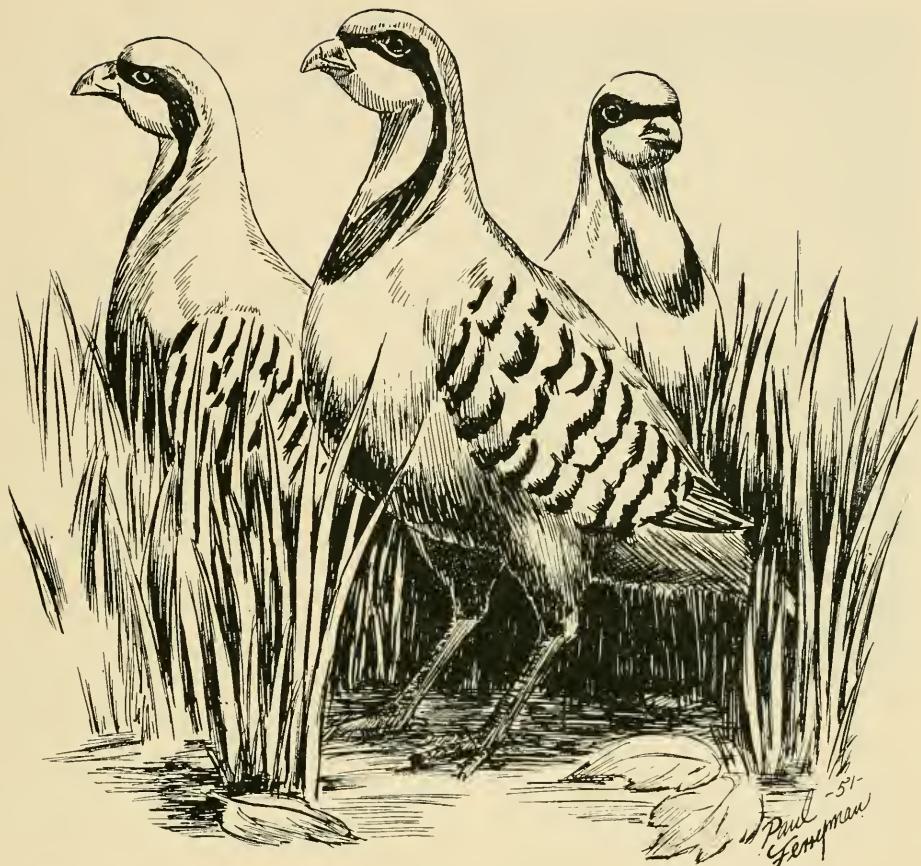
habitat created by agricultural pursuits, and now greatly outnumber all native species of game birds combined.

The ringneck population was down 40% from the preceding year which is considerably below the all time high set in 1941. During the past year, the bag limit was reduced as well as the length of the season normally provided. However, reports from many areas indicated that the pheasant population was not as low as was anticipated and as a result, most hunters had a fairly successful season.

### **game farm production**

Continued operation of three game farms provided approximately 30,500 ringneck pheasants for release in the state's most suitable areas. Because pheasants have been released for 50 years or more in Montana, either by the game department or by individuals or sportsmen groups, it is useless and costly to attempt to establish pheasants in areas where it is obvious that suitable habitats do not exist and all previous attempts have failed to produce huntable populations. The cost of each liberated bird in 1949 was approximately \$2.35. It is evident that too many sportsmen yet believe that good pheasant hunting depends upon the number of game farm birds that are released. The pheasant habitat is increasing in proportion to the development of new irrigation districts. Ordinarily, there is a lag of several years or more between development of an irrigation project and the appearance of the

(Continued on page 27)



## THE CHUKAR IN MONTANA - *how it is faring*

A policy adopted a long time ago by the Montana Fish and Game Commission has been the introduction into this state, whenever and wherever it was possible, of new species of fish, game and game birds. The Treasure State originally was endowed with many different types of quarry, so not too many new ones have been brought in. But, of those who have found Montana their foster-home, the Chukar partridge presents the most interesting background and most

promising future.

The Chukar (*Alectoris graeca chukar*) is native to northern India, Afghanistan and Nepal, and has cousins bearing various degrees of resemblance roaming the vast reaches of Central Asia. Before the turn of the century, attempts were made in Massachusetts and Nova Scotia to transplant these game birds, but they met with failure because of the cold, rainy weather, to which the Chukar

(Continued on page 26)



Courtesy U. S. Fish and Wildlife Service

Presented by Clarence Cottam, Assistant Director, Fish and Wildlife Service, Washington 25, D. C., before the annual meeting of the International Association of Game, Fish, and Conservation Commissioners, Memphis, Tennessee, September 15, 1950.

Few of us in the conservation fraternity sigh with nostalgia when the conservation turns to the great duck kills of several decades ago. To thousands of gunners, that age of waterfowl slaughter stands out as the period of "good hunting." It would be wonderful, we readily admit, if those great flights of waterfowl still filled the sky during their fall migration. It would be wonderful, we agree, if we were thus enabled to provide better hunting for the million-and-a-half additional hunters that we have today over and above the number of nimrods of even a few years ago. We all know, however, that the inor-

## THE WHY OF MIGRATORY WATERFOWL REGULATIONS

dinate kills of the "good old days" can never again be permitted. Indeed, I believe that further restrictions ultimately are inescapable unless more effective public support and sportsmen's cooperation are forthcoming.

A great many hunters can remember the time when the daily legal bag was as much as 25 birds—or at least 10 birds, as in the 1930's and early 1940's. These hunters, though less acquisitive than the early gunners, have not become reconciled to the present limitations.

### the big question

"**Why**," they clamor, "must our daily bag limit be set at such a low figure as four, five, or six birds? **Why** are we not permitted to hunt earlier and later in the season? **Why** are we restricted to a miserly 35, 40, or 55 days—when we used to hunt for 60, 70, or even 90 days, or all winter? **Why** can't we have to suffer a reduction of days when we choose a split season? **Why** can't we use live decoys?"

The "why's" of our hunting regulations seem to be the burning questions of the day. The answer is obvious when we understand the problem facing us today—a problem arising from the marked decline of waterfowl populations and a marked increase in hunting pressure.

Waterfowl and most other wildlife have always receded before the pressure of an expanding civilization. Human occupancy of the land, with its cultivation, drainage, lumbering, pollution—all these and many other factors have cut deeply into wildlife habitat. During the recent National emergency, the cultivation of more land was intensified and the deforestation of our watersheds was accelerated. Our increasing human population and the growing needs of a people desirous of an improved standard of living inevitably

will bring about still further destruction. It is manifestly impossible to continue to reduce waterfowl habitat and still maintain waterfowl habitat and still maintain waterfowl populations at a level that will permit extravagant hunting.

#### habitat situation

The loss of habitat has been the primary cause of the decline in waterfowl populations. Less habitat is available for the production of waterfowl; there are fewer areas in which the birds can find sanctuary and respite from hunting pressure; and there is less and less marshland to provide sustenance for the migrating and wintering flocks. Drainage in America has been excessive and continuous. At present, we have nearly 90 million acres of our land in organized drainage districts and another 50 million acres in unorganized drainage enterprises. In the past eight years, with Government subsidy or help, some six million acres of land have been drained; yet, during the past 20 years the Fish and Wildlife Service and conservation departments of our 48 States have together restored less than 4½ million acres of waterfowl habitat. A similar trend in the destruction of waterfowl habitat has occurred in the agricultural belt of the Canadian prairies. At the turn of the century there were approximately 3½ million acres under the plow. Today there are upwards of 50 million acres in agriculture, and much of the rest is under heavy grazing. With such destruction of habitat, it is surprising that we have as many waterfowl left as we have at present.

Aside from the destruction of habitat through competition or conflict with other economic interests, the problem of wise waterfowl management has been intensified by the growing popularity of the sport of wildfowling. After the war, workers had increased hours of leisure and higher wages, soldiers had come home determined to enjoy the fruits of their victory and to put to use their newly acquired knowledge of the use of firearms and ammunition. As a result, more and more hunters joined the ranks of the wildfowlers. Hunting, as a recreation, was played up by advertisers, sportsmen's organizations, and

game departments, and the increased sale of guns and shells was accompanied by an increased sale of duck stamps. In recent years, over a million more hunters than during the prewar period bought duck stamps. In fact, in a little more than a decade, four persons were gunning for ducks where only one was hunting before.

#### the obvious WHY

With fewer ducks and four times as many hunters, it is inevitable that the apportionment of the supply means fewer birds per hunter. This is a simple bit of arithmetic and the most obvious reason for the **why** of the present waterfowl regulations. Most State administrators face the same problem in even greater degree in the management of upland game. The basic reason for all regulations, whether they be concerned with strictly local or with migratory game, is to gear the harvest to the production surplus.

By authority of the laws of the United States, under the terms of the conventions with Great Britain (Canada) and Mexico, the U. S. Fish and Wildlife Service is charged with the responsibility for managing our waterfowl resources. Provision is made by law—as it should be—for hunters to take the harvestable increase whenever that increase is sufficient to permit the hunting without endangering the breeding stock. What the harvest should be, and in what manner and at what times it should be taken, must be determined by the Service, which works in close cooperation with the States.

As the Fish and Wildlife Service is charged by law with the preservation of our waterfowl resources, any harvest by hunters must of necessity be based upon the annual increment and a long-term consideration of the population. Production and harvest must be so geared that each year there will remain an **adequate** capital stock of breeding birds. In preparing the regulations for any season, the Service must consider the probable supply for the following year, the next 10 years, and the next 50 years. To proceed otherwise would be an abuse of a public trust and a breaking of faith with posterity. Within the

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limitations of providing annually for an adequate breeding stock, it is the duty of the Service to make the regulations as liberal as the supply will permit. Furthermore, the public has every right to expect that any harvest will be taken on as equitable a basis as natural factors of supply, distribution, habitat, climate, and necessary administrative restrictions will permit. Here again we see the **why** of the waterfowl regulations. Working in cooperation with the States, the Fish and Wildlife Service determines the status of waterfowl, and then recommends suitable hunting regulations for the United States, because only a Federal agency can administer laws pertaining to a National and mobile resource—a resource held in common by all the people rather than by those of a few clubs, a single State, or even by those of a group of States.

#### clamor for more kill

From the point of view of those who must enforce regulations to conserve this National resource, the problem of public relations is greatly complicated by the progressive but continual loss of waterfowl areas. Although the flights of ducks and geese are dwindling, when viewed on a long-time basis, our incomparable network of good roads and constantly moving human population causes the birds to be seen now by more people than ever before. As the marshlands and potholes are drained, the waterfowl are forced to rest on rivers, lakes and reservoirs near human habitations. Moreover, because too many of such areas have little or no food for the migrating birds, they must forage on adjacent crop lands—thereby giving rise to serious problems of depredation. Thus, with more birds being seen, an increased amount of damage being done appears, and these occurrences being given more and more publicity, and the result is a great clamor from the sportsmen for an increased kill and longer seasons.

We cannot yield to the demands of special-interest advocates, nor to those of sincere but unqualified "experts." If we were, we must be certain that our error of judgment favors the continuance of wildfowling as a source of recreation for future generations of Americans.

It is difficult to know just where to draw the line between the **how** and the **why** of the waterfowl regulations. You will know how the Fish and Wildlife Service spark-plugs the great cooperative surveys that serve as the basis for the waterfowl regulations. You know how the various State game departments and the Dominion and the Provincial Governments of Canada, and private agencies including the Wildlife Management Institute, Ducks Unlimited, and private clubs cooperate with the Service in gathering information for the winter inventories or for the detailed quantitative reports of production on the summer breeding grounds. With the advice of the cooperating organizations, the Service interprets the information obtained through these surveys, and then makes its recommendations.

In recommending regulations that permit an equitable harvest of the increase, the Service must, of course, first determine the population trends of the waterfowl in the different flyways. If the increase is sufficient, the hunter should be permitted to take more birds



My Gawd! I didn't know the mist was this thick.

—either through an increased bag, a longer season, a longer shooting day, or by a combination of these and other measures. Obviously, a decrease in waterfowl necessitates more restrictions.

#### **population and pressure**

In the management of waterfowl on a flyway basis, due consideration must be given both to waterfowl population densities and to hunting pressure. Unfortunately, this invariably leads to some difficulties, for the simple reason that the average hunter is heartily in favor of good conservation for everyone except himself. The average hunter approves of flyway management as long as his State is granted the most liberal regulations. As soon as a neighboring State receives more liberal regulations, however, he charges the Service with discrimination. Obviously, there is some overlapping between flyways and particularly near the boundaries of flyways in the northern tier of States; yet, in considering broad belts, the flyway concept is biologically sound. It is based on the information obtained from banding more than a million waterfowl.

When pointing out some of these difficulties, we might look first at the Atlantic Flyway, which (during the 1949-50 season, had 20 percent of the birds, and where 12 percent of the Nation's hunters took 12 percent of the Nation's waterfowl kill. This flyway is a huge funnel, its birds coming to the Atlantic seaboard from base regions in the Canadian sub-Arctic and from many of our northeastern and Lake States. As the mouth of this funnel is in the Chesapeake Bay area, vast numbers of ducks and geese are concentrated in the State of Maryland during a large part of the hunting season. Because of this, many Maryland hunters have come to believe that the waterfowl resource is inexhaustible, that the ducks and geese they see are **their** ducks and geese to hunt and kill, and that a miserly limitation of four ducks in the daily bag is the spiteful dictate of "chair-warming bureaucrats." As a result of this attitude and the attitude of a few courts, it has been very difficult to enforce the regulations—particularly as to baiting—in much of the Chesapeake Bay area.

#### **thumbs down on bait**

It has been virtually impossible to convince some Maryland hunters that hunting by baiting cannot be allowed because the practice would result in an inordinate kill—not only in Maryland, but in every other State which certainly would also demand the right to use bait for decoying and holding ducks. If baiting is to be permitted in Maryland, it must be permitted in other States—and this, incidentally, a majority of the sportsmen in our country will not tolerate. Maryland gunners also forget that if baiting were permitted in Maine and New York, for example, more birds would be held in the north where they would be inaccessible to Maryland hunters—and might be killed by late fall and early winter storms. The over-all effect would be disastrous, as we learned when baiting was permitted.

The Mississippi Flyway, of course, offers still other perplexing problems which must be considered when regulations are formulated. This flyway is like the Atlantic in that it had approximately 20 percent of the waterfowl wintering in the United States during the past winter season. Unlike the Atlantic Flyway, however, the Mississippi Flyway had 43 percent of the Nation's hunters who took 46 percent of the waterfowl killed in the United States during the 1949-50 season. In other words, with only slightly more than 20 percent of the birds, the hunters in this flyway accounted for nearly 50 percent of the National bag of ducks and geese.

#### **the mississippi problem**

This tremendous hunting pressure makes it necessary—unpleasant though it is—to place restrictive measures on the hunters of the Mississippi Flyway, and this explains why the Service is at present being charged with discriminatory regulations, by sportsmen and some of their leaders in Minnesota, Illinois, and Louisiana. It is mandatory, however, that in this flyway the length of season and the daily bag and possession limits be set at a relatively low figure in order to reduce the excessive kill. Although it is true that the daily bag limit is low and the season shorter than that of any other flyway, nevertheless

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the daily bag and season still compare favorably with those set by most of the States for the various species of upland game birds over which the States have sole jurisdiction. For example, in 1949, Illinois hunters were permitted to take two cock pheasants a day, with a possession limit of four in a 15-day season. Ohio hunters could take two pheasants per day; while Minnesota hunters, in from about five to fifty percent of the State, had to be content with a daily bag of three pheasants, three sharp-tailed grouse, or three Huns, and they were granted a very short season. The season was closed on some other of their upland game. I am not criticising these State regulations, as they undoubtedly were just and equitable. They are given to show by comparison that all regulatory agencies—Federal and State—must attempt to gear harvest with production, and must consider both hunting pressure and the harvestable surplus that is available. They show that the problem of boundaries is equally as perplexing to the States in regulating hunting of non-migratory game as it is to the Federal Service in managing the migrant species.

#### **zone agitation**

In the Central and Pacific Flyways, where there are the large States of Texas, California, and Montana, there is a great deal of agitation to split these and other States into different hunting zones. Considering only the local or State problem, this attitude is easily understood. Local sportsmen can present a logical case for the dividing of such States as California, Montana, or Texas—or, coming eastward, Missouri, Illinois, New York, or New Hampshire, where there is constant demand for zoning. But, if some States are granted zones for waterfowl hunting, it will be almost impossible to refuse the requests of other States for zones that would be based on county lines, drainage districts, or an "area bounded on the north by Highway 6, on the east by the Red River, south of MacQuarry's thence westward to the Turnpike." Even Delaware, with only three small counties, has been so insistent in her demands to be zoned that her Congressmen and Senators have introduced several congressional bills to force

the Service to recognize in effect two great States of Delaware. It will be obvious that zoning a State has the effect of materially lengthening the shooting season in that State, as neither the State nor the Service can prevent the hunters from migrating from one zoning to the other in that State, and thereby enjoying a double shooting season. It definitely favors the wealthy sportsmen. Such a privilege granted one State logically would be demanded by all other States. The major objection to granting that privilege is that the supply of waterfowl will not permit it. Furthermore, it is discriminatory against the average hunter of low or moderate income. From a National viewpoint, it is obvious that zoning would increase the kill far beyond what annual reproduction could permit. Consequently, the Service has been compelled to refuse these requests.

#### **state adjustments**

In the last few years, since it has become necessary to reduce the season to periods ranging from 30 to 55 days, the Service has permitted each State to determine its own season within a framework—a continuous period or two shorter equal seasons—within a 92-day period extending from about October 6 to 7 to about January 6 or 7. Thus, within the over-all period or framework set up by the Service, each State has been enabled to adjust the time of the harvest as closely as possible to its own conditions and requirements. The purpose of the framework, of course, has been to achieve some degree of continuity among the States, and thereby to prevent an excessive kill and to equalize, in so far as is possible, the hunting privileges enjoyed by people living along the border of a State and by those living in the interior.

The Service has been compelled to insist that certain adjoining States have the same season. By way of illustration, it may be pointed out that Arkansas, Louisiana, Tennessee, and Mississippi have in common the Mississippi River as a boundary line. Because of the meandering river, portions of one State are often encircled by portions of another, and exact boundary lines are not always known. In fairness to the hunters of each State, we have felt that here we must

insist upon reasonable uniformity of season in these four States.

#### **staggered seasons**

Staggered seasons, with rest days between days of hunting, would be popular in many quarters. Large clubs, especially, would like see a season in which two or three shooting days per week were authorized. The staggered season was put to a test in 1934-35, when 30 shooting days were provided in a season of two or three months (whichever the State selected). The kill of waterfowl during those 30 days was as great as the kill during a 70-day season of continuous shooting in a year when more hunters were in the field and the bird populations were much greater. Because it is well known that larger bags can be made after "rest days," we must deny requests for a staggered season—in the interest of the waterfowl resource and the future of wildfowling.

The use of sun time, instead of clock time, has obvious merit in designating shooting hours. The use of sun time reduces the complications of time zones and daylight-saving time, particularly along a broad and indefinite belt between time zones. Local papers usually print the clock time of sunrise and sunset, making it easy for hunters to comply with the regulations. If a State within a single time belt desires to choose a specific opening and closing hour, this can be done by prescribing those hours completely within the limits of the sun time prescribed by the Federal Service.

In certain parts of the country, hunters complain about the regulations that prohibit hunting prior to one-half hour before sunrise and later than one hour before sunset. As with other regulations, these restrictions have been formulated more for the sake of the ducks than for the convenience of the hunters. Ducks must eat and rest if enough are to survive to return to the breeding grounds in the spring. Each year, an individual duck may be subject to legal hunting for about six months, beginning early in September in northern Alaska and Canada and terminating in March in Mexico.

#### **the hunt, not the bag**

All sportsmen worthy of the name learned

long ago that it is the hunt—not the enormity of the kill—that is worthwhile. If a hunter bags three or four birds a day, he has enough for a meal of wild game, and the thrill of a day in the open must be considered in the final reckoning. The average hunter has a season bag in excess of nine ducks, a surprisingly good average. Pheasant and grouse hunters in most States might envy it.

Occasionally hunters send to the Washington office of the Service an account of their hunting expenses. A typical summation shows that the hunter spends about six dollars per duck. The disgruntled hunter usually follows this statement with the remark: "Six dollars for one duck . . . bah!" To these hunters I must point out that the most expensive round or sirloin steak sells for about one dollar a pound, and most other cuts are cheaper—if they want cheaper meat. Hunting game cannot be considered in terms of its meat value only.

#### **state regulations**

Many sportsmen, it is true, recognize the need of further regulation as a means of preserving their recreation and distributing the kill more equitably. With this goal in mind, such well-informed and vigilant sportsmen have advocated that their States promulgate with the regulations of the Service. Certainly it is within the powers of any and further regulations that will be compatible every State to limit still further the bag and season granted by the Service to that State, and to prescribe further the manner in which waterfowl shall be taken within its boundaries. Thus, where a small group of individuals may be drawing too heavily upon the public shooting grounds in a State, the authorities there may be called upon to limit the number of trips that any one person may make to those grounds—or to place a more restrictive season or bag on the birds in that State, to require that the birds be tagged, or to take such other measures as may be desirable for equitable distribution of the kill in the State.

The fewer and the simpler the regulations the better. When there is a clamor to liberalize or eliminate any regulation, there is

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one simple, safe, and effective criterion or yardstick that can be applied to determine the course of action, and that is simply to ask ourselves the question: "Will the supply permit?" Confronted with a request for a longer day or a longer season, an earlier, later, or a staggered season, a larger bag, a zoned State, baiting, the use of live decoys, or any other measure likely to favor the hunter as opposed to the birds, the administrator—if he is mentally honest—has to apply this yardstick. It must ever be remembered that our waterfowl are a prize National heritage—a renewable resource and a product of our land owned in trust by **all** our people, so that any major liberalization granted for one area, and particularly within a flyway, may logically be demanded for another, and the effect may be cumulative.

#### **unity and sportsmanship**

The greatest need to insure favorable hunting and fishing privileges—both State and Nationally—is for unity of action and an honest observance of the rules of good sportsmanship. If the staggering illegal kill, which appears to amount to one-fifth or more of the legal harvest, could be eliminated and this loss added to the legitimate bag, and if the alarming crippling loss which probably equals the loss from illegal kills could be re-

duced to a minimum through a higher standard of sportsmanship—for example, through stopping shooting out of range or flock shooting, or deliberately spoiling some other gunner's shoot—there would be fewer doubts about the future of hunting and fishing in this country. Certainly the seasons could be materially lengthened and the bag limits increased. **The future of the sport is up to the sportsman.**

The management of this National resource must be conducted on a National basis, spearheaded by one Federal agency but supported by the unity and cooperation of the State and private organizations concerned with waterfowl. The problems of maintaining our waterfowl populations are due primarily to a lack of habitat and the occurrence of unfavorable climatic conditions. Unless and until that habitat can be improved and rehabilitated through the efforts of private and governmental agencies, we must safeguard our waterfowl heritage and protect it by rigid regulations, seasons, and bag limits, and by good sportsmanship and proper management. That is **WHY** we have regulations: to preserve and improve for tomorrow the good hunting that we have today, and to apportion fairly among our hunters the harvestable surplus that is available.

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## **DOE STORY**

(Continued from page 9)

when one hunter would take as many as 100 deer per season.

#### **the crisis**

Now we have arrived at what might be termed the apex of the cycle. The situation as it stands is that, instead of danger of extinction, the deer in the nation's herds have increased to the point where they are so numerous that there is insufficient natural food to support them. This poses a problem for big game biologists and conservation departments. What to do?

The answer is simple, but public opposition to such action is so vehement that most fish and game agencies are hesitant to proceed with it, and grope fruitlessly for an alternative, which is to be had because of the inherent nature of the dilemma. When deer in a certain district are eating themselves "out of house and home," start reducing the herd by eliminating a pre-determined number of does and fawns.

#### **"slaughter"**

When such a move is made, cries of "sacrilege," "slaughter," "heart-(Continued on page 33)

## WILDLIFE RESEARCH

(Continued from page 4)

the end of the experiment period he will weigh the elk and figure the weight change if any in relation to the amount of each type of food eaten. From this study, Roger will be able to discover which food the animal likes most, and which will do him the most good. This knowledge of the amount of food required by one elk will help game men determine the number of animals a winter range can support.

The Fish and Game Department will construct the necessary pens at the Boyd Ranch for this study.

### animals like licks

Another project involving the likes and dislikes of game animals is being undertaken by Dwight Stockstad

Summer Dow, student from Knoxville, Tenn., inspects antelope jaws for his project.



who hails from South Dakota. He wants to find out why certain natural mineral "licks" are being used by big game animals. First on the agenda of his plan is to run chemical analyses on licks which are known to be visited frequently by wildlife, particularly big game species. Then he will compare that lick with the soil surrounding the deposit for a mineral content check. Next he will run a chemical analyses on the excretions of the animals to determine what their bodies used and what was passed off. The final step is a direct observation to calculate what percentage of specific animals use the licks most often.

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Dr. Philip Wright displays the pelts of two types of marten; on the left is a Rocky Mountain, and on the right is the pelt of the Selway marten.



Considering that perhaps the mineral lick which is available to them may not be the most desirable, Dwight has planned a "cafeteria," or assortment of salts from which the animals may choose. From an economical standpoint, these findings will aid the Fish and Game Department in distributing salt to direct the wild herds to certain areas in winter, and away from the grazing lands of domestic stock.

#### **glacier goat-lick**

One of the most interesting mineral licks in the state is the one known as "Goat Lick" near West Glacier, Glacier National Park. A tourist attraction, it is a wide blue outcrop in the side of the river bank where mountain goats and other animals go to get their minerals.

An environmental study of winter game ranges to determine suitability of environment for mule deer, whitetailed deer, and elk, is the project chosen by Dick Carter. His undertaking will follow former surveys which point out patterns of distribution of elk and deer in certain areas and he will endeavor to establish the criteria on which big game range can be evaluated in western Montana in relation to apparent requirements for whitetailed deer, mule deer, and elk. In other words, Dick wants to know why one area is more suitable than another for a specific type of big game animal. He will study intensive areas every month, and make extensive area studies in early and late winter, examining the territories for forage density, forage exposure,

snow depth, cover types, and slope.

#### **wild vs. tame**

With high hopes of obtaining the necessary facilities, another student by the name of Wes Woodgerd will make a survival study on game farm pheasants and wild pheasants in order further to evaluate the game farm as a management tool. He will investigate the vitamin A content of eggs, fertility and hatchability, disease, growth, weights, and mortality of both game farm and wild birds to determine why survival of wild pheasants is higher than that of tame, or bird farm pheasants.

The success of this project is dependent upon facilities available to the Moiese station this spring.

The Western Montana Fish and Game Association at Missoula out of interest in this project, has already contributed \$1,000 toward initiating this Moiese area as an experiment center, and may continue that contribution annually for the next two years.

#### **age, please**

Sumner Dow, a student from so far south that rabbits are big game, will do research on age determination in antelope. He will use the teeth of antelope of known ages to set up a standard measuring device. A similar study has been done on deer, and this year those results were used in determining ages of deer in the Thompson and Fisher river area. The antelope results will help set maximum kill on these animals each year in order to keep herd balances and will aid in forming better manage-

ment programs for the antelope. The National Bison Range has offered space for containment of a small herd of antelope to provide known-age specimens for this study.

The National Bison range is also providing an experimental herd of bull and cow elk to aid the unit in another project under the supervision of Dr. Cheatum and Dr. Wright to determine facts hitherto not well established on the breeding habits of elk.

The study will include more precise checks on the gestation period, whether cows have recurrent heat cycles during the same breeding season, whether yearling bulls are fertile, and under what conditions yearling cows may breed. They will also examine known age embryos from elk so as to provide a measuring tool for determining the breeding dates and the duration of the breeding sea-

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I NEVER GET SHOT AT WHEN I WEAR THESE!





## THE CHUKAR IN MONTANA

(Continued from page 15)

was not accustomed. Because of the climactic conditions prevalent in the eastern part of the United States, game experts state that it is doubtful whether successful planting and propagation will ever be accomplished there.

### the trek west

When the famous quotation, "Go West, young man," was uttered, it was heeded by those interested in seeing that the Chukar got a foot-hold in North America. Successful introductions of the pound-and-a-half gamester were made in 1930 in Idaho and South Dakota. Reports state that these stocks have been doing very nicely, and that most of the Rocky Mountain states east of the Continental Divide afford the ideal habitat since the climate is very similar to that of the birds native country.

Last year, for the first time, the

State of Washington, one of the pioneers in Chukar importation, had an open season on the birds. A careful selection of this state's brood stock seems to have proven beneficial. Initial stocks from India were taken from areas of low altitude and released in high, plateau areas. Now, the effort is being made to secure the birds from the type of habitat in which they are to be released, and this appears to be working out satisfactorily.

### good luck in montana

Montana's present brood stock came from Washington last summer. One hundred and forty Chukar eggs were shipped to the Billings Game Farm where they were tended by J. R. Wells, superintendent of game farms, and his assistants. Nearly 100% of the eggs hatched out, and presently 104 Chukars strut within the confines of the Billings establishment.

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## MONT. DEPT. TAKES STOCK

(Continued from page 14)

minimum cover required for pheasants.

### deer and antelope

Deer and antelope in Montana are more than holding their own, and are on the increase in some parts of the states eastern ranches. How large these populations should become is dependent upon the relationship of each species of wildlife with other uses of the land. Control measures have been necessary each year for the past few years to reduce population deer and antelope in areas where the population of such game had increased to the critical number and damage to agricultural crops was becoming serious. It is over-optimism to believe that a large game population can be maintained in such areas by seeking methods of keeping game away from crops by fencing and herding; nor can it be expected that the Fish and Game Commission can ever purchase or maintain public wildlife land sufficient to feed all the game in any region. Our management program must be to keep such game populations at or below the critical number where severe damage occurs either to agricultural crops or to the habitat itself. Limited kills by hunters of either sex of animals, or hunters choice so far has been the best management tool to accomplish a reduction in overpopulation.

Special seasons on moose, antelope, deer and elk under special permits are justified when the hunter-demand far exceeds the supply of ani-

mals. It is not conceivable that an unrestricted season can ever again be declared on moose or mountain sheep. In every accessible area, the use of limited license control is the only means of preventing an over-kill on elk, deer and antelope.

### elk transplanting

In order to help bring the number of elk in the Northern Yellowstone herd in line with available food supplies, a controlled reduction of elk within the park was conducted by the Park Service during the winter of 1949-50. Considerable interest in this operation was shown by sportsmen and other agencies to trap and transplant as many of these elk as possible.

Prior to transplanting, agreements signed by landowners had to be secured, consenting to transplanting in their areas.

A fine spirit of conservation was exhibited by sportsmen and individuals all of whom donated time and money to hire trucks for transplanting elk. Sportsmen from Powell, Granite and Mineral counties arranged for trucks for transplanting elk into areas in those counties. One rancher from Custer sent his own trucks to the park and hauled elk to the Pine Ridge area located in Big Horn and Yellowstone counties.

The Park Service usually charges \$5 per head of elk trapped as the actual cost of trapping. This fee was waived during the operation because the Fish and Game Department supplied the hay used to bait the traps.

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Below is a list of the areas and the numbers of elk transplanted:

|                 |      |
|-----------------|------|
| Superior        | 26   |
| Pine Ridge      | 25   |
| Horseshoe Hills | 47*  |
| Garnet Range    | 212* |
|                 | —    |
| Total           | 310  |

\*Gallatin County.

\*Powell and Granite Counties.

#### law enforcement

An average of 48 deputy game wardens have been covering the state during the past 12 months. An additional district warden supervisor, was appointed for the central Montana territory with Great Falls as headquarters. Two districts do not as yet have warden supervisors.

A total of 639 arrests was made for the year 1950. Eight cases were dismissed and 10 defendants were found not guilty. Forty-nine had their licenses revoked, and 36 received jail sentences in addition to fines. The average fine imposed amounted to \$47 for all types of violations. October and November were the months during which the greatest number of violators were apprehended. One person out of every 245 who purchased a hunting or fishing license was arrested during the year for a fish and game law violation.

The inventory shows that the state's wildlife resources have been maintained at a high level and that the trust vested in the Montana Fish and Game Commission for the benefit of the populace of this state has been well and faithfully executed.

#### WATERFOWL HUNTING SEASON

(Continued from page 10)

determine the trend of nesting birds. Other states do similar work in their own areas. The U. S. Fish and Wildlife Service concentrates on this type of work on the Canadian and Alaskan breeding grounds. This work pays off in the more complete management of the waterfowl resource.

#### a third factor

This yearly trend in the total breeding population is then incorporated with a third factor, the success that the nesting birds had on the breeding grounds. Thus, the Fish and Wildlife Service has two checks on the total waterfowl population and an additional check on the success of the nesting season. Armed with these facts and figures they can apportion to each flyway the number of birds that can be killed without cutting into the breeding stock.

The average daily bag of hunters and the number of hunters for each state within the flyway are being determined by the states for each hunting season. These averages if taken over a long period of time, provide reliable figures on how many birds can be expected in the hunters' bag during an average season. These figures, plus the estimate of the harvestable surplus for the flyway, provide the Fish and Wildlife Service with a basis for the hunting season necessary to remove the birds. The methods used to regulate the kill are of course well known, as: length of season, bag limitation, hours of hunting, and gun limitations. After the proper restrictions have been deter-

mined for the maintenance of the breeding stock, the states involved are given as much choice as possible in the season desired.

#### **montana's 1950 season**

The State of Montana was given a choice in 1950 of a season of 45 consecutive days, or a split season consisting of two 18-day periods. In addition, they were given the choice of opening the season on any one of the following dates: October 6, 13, 20; November 3, 17, December 1 or December 19, providing that the season did not close later than January 5, 1951. If a split season were chosen, at least two weeks must elapse between the close of the first period and the beginning of the second period.

The season chosen by the State of Montana for 1950 was the split season of two 18-day periods, the first beginning on October 6 and the second period beginning on November 17.

At first glance, it would seem an easy matter for the Fish and Game Commission to pick a season from the several choices offered by the Fish and Wildlife Service. However, when you take into consideration that: (1) The hunters throughout the entire state should be given an equal opportunity to hunt waterfowl, (2) The State of Montana stretches east and west over a distance of approximately 550 miles involving mountains, plains and intermediate areas (because of the north-south migration of waterfowl, the distance through the state from north to south does not exert a major influence on the hunt-

ing), (3) The extent of waterfowl hunting seems to be primarily dependent upon the weather which is extremely difficult to predict, (4) Water areas in the eastern end of the state are generally frozen over completely by November 1, and consequently an early season is desired, while the water areas in the western end of the state stay open later and the hunters are desirous of a season which runs into December, and (5) The length of the season is limited by the choices extended by the Fish and Wildlife Service. When these points, and they are only a few of the many involved, are taken into consideration and justly weighed one against the other by the Fish and Game Commission, the difficulty involved in picking a season to satisfy everyone becomes more apparent. All too often, we are prone towards criticism of a hunting season that does not suit our particular situation. We sometimes tend to forget the over-all problem of considering the entire state and its people as a unit. The worth of a hunting season cannot be judged from the praises or gripes of individuals but only from the general satisfaction or dissatisfaction displayed by majorities.

#### **a good season**

From the hunters' standpoint, the 1950 waterfowl hunting season in Montana was the best of the past three seasons. The past three seasons are the only ones on which a concerted effort has been made by the State Fish and Game Department

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to obtain kill records. There is really only one way to judge the worth of a hunting season and that is by the number of birds bagged by the individual hunter. The average daily bag of waterfowl has risen from 1.3 birds per hunter in 1948 to 1.9 birds per hunter in 1950. Perhaps this does not seem like much of an increase, but if all of the Montana hunters who bought duck stamps hunted for only one day it would mean about 18,500 birds added to the bag for that day.

The number of waterfowl hunters, as determined from duck stamp sales, in the state varies slightly from year to year. During the past four years the number of duck stamps sold in the state has varied from a low of 30,858 in 1950, to a high of 36,065 in 1948. It was determined that almost 20 per cent of the duck stamp buyers in 1950 did not hunt ducks during the first half of the season, but it was also determined that the number of hunters under 16 years of age who are not required to have a stamp amounted to almost the same figure. Therefore, the number of hunters in the field totals about the same as the actual duck stamp figure.

#### **arriving at a figure**

In order to determine the total kill for the season, we use the number of waterfowl hunters, times the average number of birds per hunter per trip to the field, times the average number of trips made to the field by the hunter. For example, to determine the total kill for the first half of the season, we use the duck stamp

figure for a base, times the previously cited average number of birds per hunter per day of 1.9, times the average number of trips each hunter made to the field which was calculated as three. We then have a total kill for the first half of the season of 175,900 birds. Computations have not been completed for the determination of a comparable figure for the second half of the season.

Perhaps, by now, the reader is wondering where we get our information since it is an almost impossible task to contact all of the hunters in the state. In order to eliminate the task of contacting all hunters, we have established voluntary checking stations in three areas and these are run each year in the same manner and on the same days. This method does not give us total information, but it does provide us with a good comparable check of the success within a prescribed area from one year to the next. There has been one checking station at Great Falls which has given us a yearly sample of hunter success around Valier, the Fairfield Bench, Freeze-Out Lake, the Fort Shaw area, and the Augusta area; another station at Missoula has given us yearly samples from the entire Flathead Valley, and, also, that section of the Clark's Fork area around Perma; another station has sampled the Bitterroot Valley area. As previously stated, this method does not sample the entire state, but it is reasonable to assume that if the kill is greater in these sample areas, it is also greater in the remaining portions

of the state. The 1950 waterfowl kill was found to be greater than for previous years at all stations. In addition to these stations, we also have personal interviews with hunters, card questionnaires sent to hunters, warden checks and other additional voluntary checking stations, in order better to determine the kill.

#### **species determination**

Another bit of information gained from our checks of the hunters bag of waterfowl is the species killed and what per cent each species contributes to the total bag. Any Montana hunter realizes that he kills more mallards than any other duck. We find that he not only kills more mallards than any other species, but that mallards constitute 65 per cent of the bag. The remaining 35 per cent of

the bag is distributed through 16 species of ducks and two species of geese. However, the five most important ducks are mallards, bald-pates, pintails, green-winged teals, and shovellers which make a total of approximately 87 per cent of what the hunter can expect to bag in Montana.

The best hunting regulations are made when the information on the subject species is the most complete. It is the aim of the Montana Fish and Game Department, in the interest of its hunters, to supply information second to none on the waterfowl conditions within the state. This of course will involve more intensive work by the State Fish and Game Department but, in addition, will also require a lot of willing cooperation from hunters and sportsmen.

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## **THE CHUKAR IN MONTANA**

(Continued from page 26)

According to Wells, a release of some of these birds may be made next fall.

If this release takes place during the coming Autumn, it will be by no means the first to take place in Montana. The first release of record was made in 1934 when eight of the birds were set loose. Since that time, 1,200 more Chukars were freed, with the largest number being released in the 1943-1944 period. In those two years, 473 were placed on their own.

The habitat generally preferred by the Chukar consists of high, barren, cheat-grass hills with rock slides. Other game birds and animals prefer lusher living, so there is little competition with other species for their homesites. Definite figures are not

available on the ability of the Chukar to survive heavy snows and severe cold, but they do not suffer very harmful effects, apparently, as some have been sighted in high, cold country.

#### **the "big plant"**

William Bergeson, upland game bird biologist for the Fish and Game Department, states that plants of more than 150 birds have proven the most successful. The smaller plants, such as Montana has been in the practice of making, have not lived up to expectations, and future plants will probably be made along the lines proven by Washington and Oregon, original advocates of the "big plant."

When the time finally arrives that  
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large transplants of these birds can be made from the Billings game farm, there will be no shortage of release sites. Many have already been selected in anticipation of a thriving Chukar population.

#### **a montana season?**

"When will Montana have an open season on the Chukar?"

This is one question that only time can answer. We are now in the cultivation of an adequate brood stock stage of development. There are too many variables involved to make a definite prediction. The Chukar is subject to many forms of poultry diseases; suitable habitat within the state must be tried and proven satisfactory; a healthy and substantially large brood stock must be raised and protected. These are but a few of the factors to be considered, but they give the reader the basis for the statement that a prediction at this time is impossible.

When Chukar hunting does come to this state, it will be a source of much enjoyment for many sportsmen. Pursuit of this exotic bird is an up-hill job, the bird seeking refuge in the higher ridges when alarmed. It is a job for both man and dog, but the reward of a roasted Chukar before the successful shotgunner is second to none. Those who have tasted of its delicate meat state fervently that it is better than pheasant.

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#### **HUNTING CASUALTIES**

(Continued from page 2)

cidents occurred, forms were filled out and sent to the Helena offices,

and then forwarded to the office of the National Rifle Association in Washington, D. C. Here, when all reports are received from the 43 participating states and three Canadian provinces, the data will be compared and careful analysis made. From the results of this digest, it is hoped that constructive ideas which were previously not thought of will be forthcoming. Policies based on these suggestions and recommendations can then be formulated by the state conservation agencies to reduce the annual hunting toll.

The problem of accidental shootings is not one, however, that can be solved by a single, sweeping plan. A definite line cannot be drawn separating those capable of handling firearms and those naturally careless or having no respect for the fundamental laws of safety. Any situation involving individuals and their respective personalities is impossible of solution with only one blueprint.

Each hunter is a potential killer. A rifle is not a toy. It was meant to kill. What it kills is up to the person handling the particular weapon.

The Fish and Game Department will continue to advocate safer handling of guns and will, whenever and wherever it can, bring to the public's attention such information as it has regarding this very vital topic. But, all of the words said and all the words written will be for naught until each hunter realizes that an accident can happen to him, and not just to the "other fellow." One of the sportsman's resolutions for the year 1951 should be, "Teach safety — practice safety."

## DOE STORY

(Continued from page 22)

lessness," and "the end of big game in Montana" are to be heard far and wide, both from groups and from individuals. The Fish and Game Department is showered with resolutions, protests, petitions and assorted vitriolic comments from the alarmists.

There is apparently a feeling among some people that conservation agencies are manned and directed by incompetents, and that decisions made by said incompetents are without thought, foresight, or sound reasoning. There is a failure to appreciate that such steps as the proclaiming of a doe deer season in one area or another are not made on the spur of the moment, but only after a careful consideration of the factors which go to make up the situation dictating such action.

### "judge not—"

Should a cattle rancher take advice on the manner in which he should manage his Herefords from a person who has casually viewed his herd from a passing car, and perhaps purchased a choice cut over a restaurant counter? The answer seems obvious. Should, then, a conservation agency, the personnel of which is made up of trained wildlife observers, experienced biologists, and other qualified individuals, completely alter or drop altogether its plans for the management of deer herds and base its program on the say-so of the casual and occasional hunter?

The deer that make their home in this state are under observation by

field personnel of the Montana Fish and Game Department all through the year. Constant checks on population are made, along with carefully compiled analyses of ranges, both summer and winter, as to their carrying capacities and maximum capabilities. The winter ranges are given particular attention. The condition of these winter tracts is the foundation upon which recommendations for doe seasons are made to a great extent.

### hypothetical hunt

Let us take a purely hypothetical situation to illustrate the necessity for the declaration of a doe deer season by the fish and game officials charged with this responsibility:

Area "X" is situated in the center of deer country in western Montana. It is a known winter range which experience, scientific tests, and continuous observation have shown capable of supporting, at the very most, a total of 1,000 deer during an average winter. With fall approaching, a close survey is made of the herd that will migrate to this wintering ground when snow flies and temperatures drop, and it is learned that approximately 1,500 deer will attempt to find a haven for the cold months there.

Of this number, 1,100 are does and fawns and 400 are bucks. The season opens and the hunter harvest of bucks is 250, thus reducing the total number to 1,250, or almost 10 does and fawns to one buck. Unless a subsequent season is declared, approximately 250 of this number will starve

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to death because of the range's carrying capacity. Should this subsequent season be for bucks alone? If it is, there is a strong possibility that they will be entirely wiped out of the herd, and still 100 does and fawns will perish because of insufficient browse. It is quite evident that definite action must be taken to reduce the number to less than the critical point of 1,000, and at the same time re-establish the sex ratio known to be best for herd reproduction and a stable population maintenance. The "antlerless deer season" is the only answer.

#### natural kill

Mother Nature has her own methods for the reduction of deer herds when they become too large to be supported by the winter range she provides, and if man is too soft-hearted to take the necessary action, she mercilessly eliminates the surplus, leaving many carcasses scattered throughout the forest as mute evidence of her power to balance the scales. The surplus of animals has to be controlled. Why not have a season in which sport can be enjoyed and from which meat that would otherwise be totally wasted can be utilized to supplement the diets of many families? Is there sound reasoning behind the thinking and utterances of these adversaries of "antlerless deer seasons?" They have, no doubt, never taken a foot trip through deer country where winter and food shortage have joined forces to eliminate the surplus number of deer, otherwise they would surely con-

clude that shooting is certainly more humane than starving.

#### vicious waste

Another factor which should not be overlooked in the results of a failure to effect a timely reduction in a given herd is the condition of those deer which survive the winter, after a number of their group has gone by the starvation route. They are stunted and susceptible to disease, more readily so than animals which have had adequate nourishment through the cold months. The animals that have already died ate valuable browse before succumbing to the elements and lack of nutrition, thereby depleting the store for those destined to survive. Consequently, the survivors are inferior and are not likely to reproduce at a normal rate. Where a healthy doe would usually drop twins, or even triplets on occasion, the doe that suffered through a winter with insufficient food would either drop but a single fawn or none at all. The future of the particular herd would seem dim, indeed.

The experts across the country are almost unanimous in their view that "doe deer season" or "antlerless deer seasons" are absolutely necessary to the proper management of deer herds. The lag between this opinion and that popularly expressed by the sporting people is sometimes disheartening to the wildlife administrators charged with the responsibility of maintaining, among other things, the deer populations at a high and healthy peak. But, it is happily noted that islands of understanding are

springing up in this sea of adversity in the sportsmen's organizations, themselves. Here in Montana, there is a growing inclination to rely on the decisions made by the Fish and Game Department's officials and scientists in regard to such matters as doe seasons. In the past few years, the slack has been taken up to a great extent by some far-sighted individuals who have come to realize that taking a rifle in hand once a year to stalk game does not qualify a person as a game manager.

#### **the "bottle-neck"**

Some outdoor writers have termed organized groups the "bottle-neck of conservation" because of their inability or unwillingness to understand the reasons behind actions taken on such controversial subjects as doe deer seasons. Though their hearts are undisputedly in the right places, their thinking is shot through with antiquated doctrines, including the "buck-only-law," and the stand taken to protect the innocent female of the species. Unless the doe members of our deer herds are brought under control and hunted when the need dictates, our over-all deer population will surely suffer, despite opinions voiced to the contrary by those championing the female cause, bi-ped, quadri-ped, or air borne.

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#### **WILDLIFE RESEARCH**

(Continued from page 25)

son by recovering and measuring embryos from cows shot in wild herds. It is anticipated that such a study would continue over a period of four or five years.

#### **guiding hands**

Each student is assigned to one of the three unit leaders. Prof. Melvin Morris will conduct projects relating to food and cover problems of big game; Dr. Philip Wright will conduct upland bird investigations and biology and economics of fur bearers in Montana, while Dr. Cheatum will supervise waterfowl investigations and population dynamics of big game species.

The main work of Prof. Morris has had to do with range work and grazing land management, and the relationship of game and domestic stock to grazing land.

Dr. Wright, a Montanan since 1939, is currently studying marten. It is his endeavor to determine the rates at which the small furry animals reproduce and something of their abundance from year to year. He believes that with these statistics maximum bag for trappers may be set more easily and uniformly without depleting the marten population.

So much for an attempt at an overall picture of an extensive, or series of extensive programs. Each project rates a story in itself, but this will do for an introduction to something that will grow and grow as time goes on, as long as wildlife is of concern to sportsmen and naturalists. The development of this unit will grow because it arose out of an expanding need. Conversely, it would not have been possible without the diligence and persistence of one Dr. J. W. Severy and his Wildlife committee members who were largely responsible for planning the unit's establishment.

# HIRING WARDENS —

## *put on competitive basis*

From now on, those applying for the job of Deputy Game Warden in Montana will have to prove that they are qualified for all the duties which that title entails. So said the Commissioners of the Montana Fish and Game Department in their February meeting.

The new procedure in employing deputy wardens requires that competitive examinations, both oral and written be given all applicants, the exams to be given at several points within the state and to be announced at least 30 days prior to the exam.

Those successful in the written test must pass an oral test, and those who pass both examinations will attend at least two weeks of pre-duty school to become acquainted with their duties.

The names of the successful applicants will be carried on an eligibility list for a period not to exceed three years and all vacancies occurring in the law enforcement branch of the department will be filled from this list.

Temporary special deputy game wardens may be assigned to duty under trained deputy game wardens further to acquaint them with their prospective duties. Then they may be assigned to a district for a probationary period of one year. At their satisfactory completion of one year of service the temporary wardens will be classed as special deputy game wardens.

Applicants must be high school graduates between the ages of 21 and 40, and must be citizens of the United States who have lived in Montana for one year immediately prior to the date of their application. They must be healthy, have 20-20 vision, or corrected with glasses, and their hearing must be normal. Preference will be given qualified veterans by allowing 5 points on competitive exams.



Above: the location chosen for the construction of the new Bluewater Springs fish rearing station about ten miles southwest of Fromberg, Montana.

Below: the rearing station after its construction by the Montana Fish and Game Department. The new station consists of a house, garage, and refrigerator unit, and, in the foreground, 5 double ponds 100 feet long and 22 feet wide. Fish will be transported from the Big Timber hatchery to the rearing station.



*I give my pledge as an American  
to save and faithfully to defend  
from waste the natural resources of  
my country — its soil and minerals,  
its forests, waters, and wildlife.*